

Environmental Decision Making

Where do we go from here?

Guidance

- ESIP strategic plan
 - Promote the productive use of Earth science by decision makers
 - Serve the interests of our members (provide guidance to the development of more successful and effective project proposals)
- OMB direction with respect to agency performances
 - Assist sponsors in the development of performance impact metrics
- All objectives hinge on the effective engagement of users – i.e., decision makers at all levels

ESIP GOALS

- **GOAL 1: Increase the use and value of Earth science data and information.**
- GOAL 2: Act as a facilitating, coordinating and advisory community-led organization to promote the use of Earth science data and information products for our members and the communities they support.
- GOAL 3: Continue to evolve the ESIP Federation (e.g., governance, structure, staffing) to strengthen the ties between Observations, Research and Applications.
- **GOAL 4: Promote techniques to articulate and measure the socioeconomic value and benefit of Earth science data, information and applications. (e.g., feedback to sponsors – value of their investment)**

ESIP Federation Strategic Plan (2009-2013)

VISION

To be a leader in promoting the collection, stewardship and use of Earth science data, information and knowledge that is responsive to societal needs.

MISSION

To support the networking and data dissemination needs of our members and the global community by linking the functional sectors of observation, research, application, education and ultimate use of Earth science.

GOAL 1: Increase the use and value of Earth science data and information.

- Demonstrate use through community-vetted demos, pilots and applications.
- Develop an understanding of communities' needs through outreach to user communities. (e.g., decision makers, teachers, students)
- Reduce barriers between data providers and data users through IT, training, and standards education. (e.g., technical workshops, outreach)
- Provide mechanisms for community review of data, products, applications and other resources.
- Develop and share alternative approaches to sustaining Earth science data and information networks.
- Support a service-oriented architecture for observation, research and application provision.
- Develop and share the story of how Earth science products make an impact from discovery, through development, to ultimate use. ("impact metrics")

Stakeholders supported by Goal 1: the entire community of Earth science data and information users

GOAL 2: Act as a facilitating, coordinating and advisory community-led organization to promote the use of Earth science data and information products for our members and the communities they support.

- Foster interactions among communities of Earth science data providers, researchers, technology developers, educators and those who put their products to practical use.
- Innovate.
- Promote use of technical standards and best practices for data management, stewardship and application development.
- Evaluate and evolve the means by which the Federation serves this goal.

Stakeholders supported by Goal 2: ESIP Federation Partners

GOAL 3: Continue to evolve the ESIP Federation (e.g., governance, structure, staffing) to strengthen the ties between Observations, Research and Applications.

- Recognize and encourage new leadership.
- Embrace technology to support community interaction.
- Establish metrics on organizational performance and progress that is made toward all goals in this strategic plan.

Stakeholders supported by Goal 3: ESIP Federation Organization

GOAL 4: Promote techniques to articulate and measure the socioeconomic value and benefit of Earth science data, information and applications. (e.g., feedback to sponsors – value of their investment)

- Create impact metrics on the value of Earth Science data and information.
- Develop metrics to describe the linkages between Observation, Research and Applications.
- Recognize and promote best practices for providing feedback to sponsors.

Stakeholders supported by Goal 4: ESIP Federation sponsors

Adopted by the ESIP Federation Assembly, January 30, 2009.

Challenges

- In support of Goal 1
 - Work to develop Best Practices for the development of products that meet the needs of users, for example:
 - User identification
 - User engagement
 - User requirements definition
 - Operational implementation
 - Develop rigorous and validated logic model(s) that describe the process by which users adopt new products in decision-making

Challenges

- In support of Goal 4
 - Assist/advise sponsors in the development of performance metrics (derived from and responsive to the preceding)



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

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M-10-01

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Peter R. Orszag
Director

SUBJECT: Increased Emphasis on Program Evaluations

Rigorous, independent program evaluations can be a key resource in determining whether government programs are achieving their intended outcomes as well as possible and at the lowest possible cost. Evaluations can help policymakers and agency managers strengthen the design and operation of programs. Ultimately, evaluations can help the Administration determine how to spend taxpayer dollars effectively and efficiently -- investing more in what works and less in what does not.

Although the Federal government has long invested in evaluations, many important programs have never been formally evaluated -- and the evaluations that have been done have not sufficiently shaped Federal budget priorities or agency management practices. Many agencies lack an office of evaluation with the stature and staffing to support an ambitious, strategic, and relevant research agenda. As a consequence, some programs have persisted year after year without adequate evidence that they work. In some cases, evaluation dollars have flowed into studies of insufficient rigor or policy significance. And Federal programs have rarely evaluated multiple approaches to the same problem with the goal of identifying which ones are most effective.

To address these issues and strengthen program evaluation, OMB will launch the following government-wide efforts as part of the Fiscal Year 2011 Budget process:

- **On-line information about existing evaluations.** OMB will work with agencies to make information readily available online about all Federal evaluations focused on program impacts that are planned or already underway.
- **Inter-agency working group.** Together with the Domestic Policy Council, National Economic Council and the Council of Economic Advisors, OMB will establish a new inter-agency working group to promote stronger evaluation across the Federal government.
- **New, voluntary evaluation initiative.** As part of the Fiscal Year 2011 Budget process, OMB will allocate a limited amount of funding for agencies which, on a voluntary basis:

- Show how their Fiscal Year 2011 funding priorities are evidence-based or otherwise subject to rigorous evaluation;
- Assess their own capacity to support evaluation and suggest pathways for strengthening that capacity;
- Propose new evaluations that could improve government programs in the future; and
- Identify impediments to rigorous program evaluation in their statutes or regulations.

This initiative focuses on impact evaluations, or evaluations aimed at determining the causal effects of programs. And although the Administration is committed to improving a wide range of evaluation and performance measurement activities, this initiative will initially focus on social, educational, economic, and similar programs whose expenditures are aimed at improving life outcomes (such as improving health or increasing productivity) for individuals. While we would consider on a case-by-case basis the inclusion of evaluation efforts in other spheres, most activities related to procurement, construction, taxation, and national defense are beyond the initial scope of this initiative. In addition, because drug and clinical medical evaluations have independently received extensive discussions, they are also excluded.

Public Availability of Information on Federal Evaluations

This fall, OMB will work with agencies to expand the information about program evaluations that they make public. The goal is to make researchers, policymakers, and the general public aware of studies planned or underway that (1) examine whether a program is achieving its intended outcomes; or (2) study alternative approaches for achieving outcomes to determine which strategies are most effective. In the coming weeks, OMB will issue a budget data request regarding the public availability of program evaluation information. As necessary, we will work with agencies to determine how best to make more information available online.

Public awareness will promote two objectives. First, it will allow experts inside and outside the government to engage early in the development of program evaluations. In particular, OMB welcomes input on the best strategies for achieving wide consultation in the development of evaluation designs. Second, public awareness will promote transparency, since agency program evaluations will be made public regardless of the results. This function is analogous to that of the HHS clinical trial registry and results data bank (ClinicalTrials.gov).

Inter-agency Evaluation Working Group

Working with the Domestic Policy Council, National Economic Council and the Council of Economic Advisers, OMB will re-constitute an inter-agency working group of evaluation experts under the Performance Improvement Council established by Executive Order 13450. The purpose of the working group will be: (a) to help build agency evaluation capacity and create effective evaluation networks that draw on the best expertise inside and outside the Federal government; (b) to share best practices from agencies with strong, independent evaluation offices; (c) to make research expertise available to agencies that need assistance in selecting

appropriate research designs in different contexts; (d) to devise strategies for using data and evaluation to drive continuous improvement in program policy and practice; and (e) to develop government-wide guidance on program evaluation practices across the Federal government while allowing agencies flexibility to adopt practices suited to their specific needs. A key goal of the working group will be to help agencies determine the most rigorous study designs appropriate for different programs given their size, stage of development, and other factors. In the coming weeks, OMB will contact senior agency officials to provide further information your agency may need to identify appropriate representatives for this working group.

Voluntary Fiscal Year 2011 Evaluation Initiative

Finally, agencies are invited – on a voluntary basis – to submit additional information and request additional funding for high-priority evaluation activities. In the FY 2011 Budget, OMB will allocate a limited amount of funding to support up to 20 rigorous program evaluations across the Federal government or to strengthen agency evaluation capacity.

Agencies wishing to be considered for additional funding should provide their submissions to OMB using the attached template no later than November 4, 2009, and should submit a proposal with the following elements:

- **Assessment of evidentiary support for budget priorities.** Agencies should identify their major budgetary priorities and assess the adequacy of evidence supporting those priorities. Agencies should also identify key priorities for further evaluation in the coming years. In addition, for any new initiative or significant expansion of an existing program, agencies should:
 - Provide credible evidence of the program's effectiveness;
 - Describe how the agency plans to demonstrate the program's impact or otherwise learn from the initiative, and how the agency plans to act on the new information; or
 - Explain why neither of these approaches is appropriate.
- **New 2011 proposals for rigorous evaluations.** Agencies may propose new high-priority evaluations for funding. These justifications should include the estimated cost of each study and explain:
 - What existing evaluations and other research evidence are available?
 - What questions would the study address, and why are they important in shaping future policy decisions?
 - What study design would be used, and why is it the most rigorous, cost-effective methodology appropriate to answering the questions outlined?
- **Assessment of agency capacity to conduct rigorous, independent evaluations.** Agencies should describe their staffing, organizational structure, process, and available budgets for planning and conducting evaluations, and assess the agency's capacity to (a) conduct rigorous, independent studies that are free from political interference; and

(b) attract and retain talented researchers in an office with standing within the agency. Agencies are encouraged to propose changes or reforms that are needed to meet these objectives and may request funds to strengthen their internal evaluation expertise and processes. Several existing models may be worthy of consideration, including a congressionally chartered institute within an agency, or an office headed by a senior official reporting directly to the Secretary or Deputy Secretary.

- **Identification of statutory impediments.** Agencies should identify provisions in their authorizing or appropriations statutes that may have the unintended consequence of limiting their ability to carry out rigorous evaluations, allocate evaluation resources to key priorities, or otherwise impede efforts to build evidence of what works. Agencies are encouraged to suggest strategies for working with Congress to address these problems.

Discussion points

- How do we address these challenges within the ESIP framework?
 - Telecons?
 - Virtual projects?
 - ?

Suggested Options

Challenges

1. Best practices and adoption models
2. Performance impact metrics (so what?)

Options

- Case studies of decision support projects using selected evaluation tools?
 - Evaluation methods and tool inventory (from Lawrence/ ESIP experience)?
 - Typology of projects
 - Link to agency mission

Suggested Options

- Semantic registration of tools, services, models and data (ontology is everything)
- Metrics evaluation
 - Network effects
 - Dollars saved; time saved; lives saved; planets saved

To do before summer meeting

- Report / share
 - Evaluations, evaluation methodologies and tools
 - Metrics (inputs; outputs; outcomes; IMPACTS)
 - Incorporate gaming considerations
- Identify
 - Potential case studies that can be used to:
 - Demonstrate best practices
 - Evaluate performance metrics